

AMENDMENTS TO THE CLAIMS

1. (currently amended) A group III nitride compound semiconductor device of a successively laminated structure, comprising:

a substrate;

a buffer layer formed directly on said substrate;

an intervening layer formed directly on said buffer layer, said intervening layer comprising $\text{In}_X\text{Ga}_{1-X}\text{N}$, where $0 < X < 1$; and

a light-emitting layer formed directly on said intervening layer, said light-emitting layer comprising $\text{In}_Y\text{Ga}_{1-Y}\text{N}$, where $0 < Y < 1$ [[;]],

wherein a first In composition ratio of said intervening layer, X, changes from a first interface with said buffer layer to a second interface with said light-emitting layer, such that, said first In composition ratio, X, at said second interface becomes substantially equal to a second In composition ratio, Y, of said light-emitting layer.

2. (canceled)

3. (currently amended) A group III nitride compound semiconductor device of a successively laminated structure, comprising:

a substrate;

a buffer layer formed directly on said substrate and having a buffer layer lattice constant;

an intervening layer formed directly on said buffer layer, said intervening layer comprising $\text{Al}_a\text{Ga}_b\text{In}_{1-a-b}\text{N}$, where $0 < a < 1$, $0 < b < 1$, and $a + b < 1$; and

a light-emitting layer formed directly on said intervening layer, said light-emitting layer comprising $\text{In}_Y\text{Ga}_{1-Y}\text{N}$, where $0 < Y < 1$, and having a **second light-emitting** layer lattice constant,

wherein composition ratios of at least Al and In of said intervening layer change from a first interface with said buffer layer to a second interface with said light-emitting layer, such that, a first lattice constant of said intervening layer at said first interface is lattice-matched to said buffer layer and changes to a second lattice constant [[that]] at said

second interface, which is substantially equal to said light-emitting layer lattice constant.

4. (canceled)

5. (currently amended) A group III nitride compound semiconductor device according to claim 3, wherein said composition ratios of at least Al and In of said intervening layer change continuously ~~or intermittently~~ in a direction toward said light-emitting layer from said first interface with said buffer layer, so that, a band gap at said second interface of said intervening layer is wider than a band gap of said light-emitting layer.

6. (canceled)

7. (currently amended) A group II nitride compound semiconductor device according to claim 1, wherein said buffer layer comprises $\text{Al}_x\text{Ga}_{1-x}\text{N}$ ($0 \leq x \leq 1$).

8. (currently amended) A group II nitride compound semiconductor device according to claim 3, wherein said buffer layer comprises $\text{Al}_x\text{Ga}_{1-x}\text{N}$ ($0 \leq x \leq 1$).

9. (new) A group II nitride compound semiconductor device according to claim 1, wherein said first In composition ratio of said intervening layer, X, at said first interface equals 0.01 and said first In composition ratio, X, at said second interface is substantially equal to a second In composition ratio, where $Y = 0.15$, for said light-emitting layer.

10. (new) A group II nitride compound semiconductor device according to claim 3, wherein said composition ratios of said at least Al and In of said intervening layer change from 0.34 for Al and 0.33 for In at said first interface with said buffer layer to 0.11 for Al and 0.28 for In at said second interface with said light-emitting layer

11. (new) A group III nitride compound semiconductor device according to claim 3, wherein said composition ratios of at least Al and In of said intervening layer change discontinuously in a direction toward said light-emitting layer from said first interface with

said buffer layer, so that, a band gap at said second interface of said intervening layer is wider than a band gap of said light-emitting layer.

12. (new) A method of making a group III nitride compound semiconductor device with a successively laminated structure, comprising:

depositing a substrate;

forming a buffer layer directly on said substrate;

forming an intervening layer directly on said buffer layer at a predetermined temperature, said intervening layer comprising a group III nitride compound semiconductor of $\text{In}_x\text{Ga}_{1-x}\text{N}$, where $0 < x < 1$; and

forming a light-emitting layer directly on said intervening layer at a temperature substantially equal to said predetermined temperature, said light-emitting layer comprising $\text{In}_y\text{Ga}_{1-y}\text{N}$, where $0 < y < 1$;

wherein a first In composition ratio of said intervening layer, X, changes from a first interface with said buffer layer to a second interface with said light-emitting layer, such that, said first In composition ratio, X, at said second interface becomes substantially equal to a second In composition ratio, Y, of said light-emitting layer.

13. (new) A method of making a group III nitride compound semiconductor device with a successively laminated structure, comprising:

depositing a substrate;

forming a buffer layer directly on said substrate, said buffer layer having a buffer layer lattice constant;

forming an intervening layer directly on said buffer layer at a predetermined temperature, said intervening layer comprising $\text{Al}_a\text{Ga}_b\text{In}_{1-a-b}\text{N}$, where $0 < a < 1$, $0 < b < 1$, and $a+b < 1$; and

forming a light-emitting layer at a temperature substantially equal to said predetermined temperature and directly on said intervening layer, said light-emitting layer comprising $\text{In}_y\text{Ga}_{1-y}\text{N}$, where $0 < y < 1$, and having a light-emitting layer lattice constant,

wherein composition ratios of at least Al and In of said intervening layer change from a first interface with said buffer layer to a second interface with said light-

emitting layer, such that, a first lattice constant of said intervening layer at said first interface is lattice-matched to said buffer layer and changes to a second lattice constant at said second interface, which is substantially equal to said light-emitting layer lattice constant.

14. (new) A method of making a group III nitride compound semiconductor device according to claim 13, wherein said composition ratios of at least Al and In of said intervening layer change continuously in a direction toward said light-emitting layer from said first interface with said buffer layer, so that, a band gap at said second interface of said intervening layer is wider than a band gap of said light-emitting layer.

15. (new) A method of making a group III nitride compound semiconductor device according to claim 13, wherein said composition ratios of at least Al and In of said intervening layer change discontinuously in a direction toward said light-emitting layer from said first interface with said buffer layer, so that, a band gap at said second interface of said intervening layer is wider than a band gap of said light-emitting layer.

16. (new) A group II nitride compound semiconductor device according to claim 12, wherein said buffer layer comprises $\text{Al}_x\text{Ga}_{1-x}\text{N}$ ($0 \leq X \leq 1$).

17. (new) A group II nitride compound semiconductor device according to claim 13, wherein said buffer layer comprises $\text{Al}_x\text{Ga}_{1-x}\text{N}$ ($0 \leq X \leq 1$).